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Post-Doctoral Research Associate
Dept. of Physiology & Biophysics, BST-T5
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EDUCATION AND RESEARCH EXPERIENCE

2005-Present: Post-Doctoral Research in the **State University of New York at Stony Brook**, New York, USA. Research – Investigation of Breast Tumor Kinase (BRK/PTK6) and its role in ErbB2 signaling in breast cancer cells; Purification of BRK and analysis via Hydrogen Exchange Mass Spectrometry; Enzyme kinetic studies of SRC kinase and BRK using D-peptides as substrates/inhibitors; Isothermal titration calorimetry of binding.

1998-2004: Ph.D in Pharmacology & Toxicology at the **University of Mississippi Medical Center**, Jackson, Mississippi, USA. Dissertation entitled 'Regulation of Janus Kinase 2 activity': A novel JAK2 (Janus Kinase 2) tyrosine kinase activity state was identified, lacking activation loop phosphorylation. A novel redox-mediated regulation via cysteine residues was also studied. Construction and expression of site-directed and deletion mutants of JAK2 using the baculoviral expression system allowed their partial purification, analysis of tyrosine phosphorylation, kinase activity and redox sensitivity.

Relevance: Identification/Development of tyrosine kinase inhibitors, by understanding the regulation of tyrosine kinase activity.

1997-1998: Junior Research Fellow at the **Centre for Cellular and Molecular Biology**, Hyderabad. Research - Analysis of membrane desaturase activity in mesophilic cyanobacteria, and the corresponding mRNA & protein levels in response to a shift in culturing temperature.

1995-1997: M.Sc in Biotechnology at **Madurai Kamaraj University**, Madurai.

M.Sc Thesis research - Identification and quantitation of parasite-specific proteins and mRNA in *Bombyx mori* (silkworm) larvae infected with protozoan parasite *Nosema bombycis*.

Summer Research at the **Center for Cellular and Molecular Biology**, Hyderabad - Study of a sex-specific cytoplasmic protein in Syrian hamster salivary glands. Work involved testectomy, ovariectomy, or other hormonal manipulations of Syrian hamsters, followed by protein analysis of salivary glands.

1992-1995: B.Sc in Genetics, Botany and Chemistry at **Nizam College**, Osmania University, Hyderabad, India.

PUBLICATIONS AND ABSTRACTS

Xiang B, **Chatti K**, Qiu H, Miller WT, and Muthuswamy SK (2007). BRK is coamplified with ErbB2 to promote proliferation in breast cancer. **Proc. Natl. Acad. Sci. USA**: Submitted, in revision.

Mamoon NM, Smith JK, **Chatti K**, Lee S, Kundrapu K, and Duhe RJ (2007). Multiple Cysteine residues are critical to Janus Kinase 2-mediated catalysis. **Biochemistry** **46**: 14810-14818.

<http://pubs.acs.org/cgi-bin/abstract.cgi/bichaw/2007/46/i51/abs/bi701118u.html>

Chatti K, Farrar WL and Duhe RJ (2004). Tyrosine phosphorylation of the Janus Kinase 2 activation loop is essential for a high activity catalytic state, but dispensible for a basal catalytic state. *Biochemistry* **43**: 4272-4283.

<http://pubs.acs.org/cgi-bin/article.cgi/bichaw/2004/43/i14/html/bi036109b.html>

Cold Spring Harbor Laboratory Meeting on Phosphorylation, Signaling and Disease May 2007; Xiang B, Qiu H, **Chatti K**, Lakshmi B, Krasnitz A, Hicks J, Wigler M, Miller WT, and Muthuswamy SK. BRK is coamplified with ErbB2 to promote proliferation in breast cancer.

American Association of Cancer Research Meeting Abstracts Apr 2006; 891.

Duhe RJ, Smith JK, Mamoon NM, Lee S, **Chatti K**. The role(s) of cysteine residues in redox regulation of Janus Kinase 2.

American Association of Cancer Research Meeting Abstracts Apr 2005; 1307-1308.

Duhe RJ, **Chatti K**, Lee S, Mamoon NM. Multiple cysteine residues are essential for the catalytic activity of Janus Kinase 2.

American Association of Cancer Research Meeting Abstracts Mar 2004; 1071.

Duhe RJ, Kundrapu K, Mamoon NM, Lee S, Smith JK, **Chatti K**. The use of site-directed mutants to identify state-selective inhibitors of Janus Kinase 2.

Mississippi Academy of Sciences Annual Meeting 2004; 49(1): 35.

Cornelius K, **Chatti K**, Duhe RJ. The use of AG-490, a protein tyrosine kinase inhibitor, to generate non-tyrosine phosphorylated rat Janus Kinase 2 mutants in Sf21 insect cells.

Mississippi Academy of Sciences Annual Meeting 2003; 48(1): 15.

Duhe RJ, **Chatti K**. Tyrosine phosphorylation of the Janus Kinase 2 activation loop is essential for a high activity catalytic state, but dispensible for a basal catalytic state.

Mississippi Academy of Sciences Annual Meeting 2002; 47(1): 29.

Duhe RJ, Lee S, Mamoon NM, Smith JK, **Chatti K**, Kundrapu K, Marks AL. Thioredoxin-enhanced JAK activity: A target for redox-based chemotherapy?

XIV World Congress of Pharmacology (International Union of Pharmacology) July 2002.

Chatti K, Duhe RJ. *In vitro* mechanisms of rat Janus Kinase 2 regulation.

AWARDS

Lowell M Greenbaum award for outstanding graduate student presentation - South Eastern Pharmacology Society USA annual meeting, August 2000.

Fisher Scientific award for outstanding graduate student presentation - Mississippi Academy of Sciences annual meeting, February 2001.

American Society for Pharmacology and Experimental Therapeutics (ASPET) travel award for presentation at the International Union of Pharmacology (IUPHAR) meeting, July 2002.

All-American Scholar, United States Achievement Academy, 2000.

MEMBERSHIP

Community of Science (<http://myprofile.cos.com/kiranam>)

American Society of Pharmacology and Experimental Therapeutics.

All India Biotech Association.

TECHNICAL SKILLS AND EXPERTISE

Molecular Biology - Recombinant DNA handling, PCR, cloning and expression using bacterial and mammalian vectors. Construction of baculoviral and retroviral expression vectors for recombinant proteins.

Extensive experience in protein biochemistry - Protein purification and characterization, enzymatic assays and analysis by SDS-PAGE, 2-D PAGE and Western blotting. Kinase Assays and quantitative kinetic analyses, High-throughput inhibitor screening, Isothermal titration calorimetry for binding studies.

Mass Spectrometry (MALDI-TOF and ESI) of peptides, proteins and post-translational modifications.

Mammalian cell culture, immunocytochemistry for studying mammalian signal transduction. Basic *in vivo* (animal studies) skills.

Basic skills in computational biology and Bioinformatics – DNA and protein sequence analysis, usage of sequence alignment software - BLAST, CLUSTAL. Protein Post-translational modification prediction. Protein 3-D Structure modeling using DeepView, Swiss-PDB viewer.

REFERENCES

W. Todd Miller, Ph.D. Professor and Vice-Chairman, Dept. of Physiology & Biophysics, Stony Brook University (State University of New York), Stony Brook NY 11794, USA.

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Roy J. Duhe, Ph.D. (Dissertation Advisor); Associate Professor, Dept. of Pharmacology & Toxicology, University of Mississippi Medical Center, Jackson MS 39216, USA.

Phone: 001-(601)-9841625. Email: rduhe@pharmacology.umsmed.edu

Ing K. Ho, Ph.D. Distinguished Investigator and Vice-president, Division of environmental health and occupational medicine, National Health Research Institutes, Taipei, Taiwan.

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John J. Correia, Ph.D. Professor, Dept. of Biochemistry, University of Mississippi Medical Center, Jackson MS 39216, USA; Professor, Dept. of Chemistry & Biochemistry, University of Mississippi, Oxford, MS, USA. Email: jcorreia@biochem.umsmed.edu